

WELL BASE MAP WITH AREA OF REVIEW

Legend:

- Red Label = TDS Data**
- 15-22 = Class II Tulare Injector**
- 16-22 = Class II Olig Injector**
- 17-22 = Class II Stevens Injector**

Nothing (ft)

2,000.0

Line Types

- 0.5-Mile Area of Review
- Proposed Area Permit
- LPGA Property Boundary

Well Types

- Proposed Class II injection well
- Idle Class II injection well (existing well)
- Abandoned Class II injection well (existing well)
- Class II injection well
- Producing oil well
- Abandoned producing oil well
- Uncompleted abandoned oil well
- Core well or other

EXHIBIT 1 (Rev. 1: 120407)

San Joaquin Energy Consultants, Inc.
1400 Easton Drive, Suite 122, Bakersfield, CA 93309
By: D. M. Thompson, Civil Professional Geologist No. 550

**EXHIBIT 4
PROJECT BASE MAP
La Paloma Generating Plant**

Legend

- Proposed injection well
- Existing injection well
- Wastewater pipeline
- Proposed area permit
- 0.5 mile area of review
- Potable water pipeline
- Transmission line
- Raw water pipeline
- Property boundary
- One mile buffer from property
- Fault line

Wells

• 000 - Drilling	✓ 048 - Completed - steamflow
• 002 - Drilling - idle	✓ 054 - Completed - gas injection
• 006 - Plugged and abandoned - dry hole	• 009 - Observation
• 009 - Completed oil	Y 009 - Completed - water source
✓ 010 - Idle oil	✓ 050 - Oil - converted to water disposal - abandoned
✓ 014 - Plugged and abandoned - oil	✓ 052 - Steamflow - abandoned
✓ 018 - Completed - gas	✓ 140 - Vapor disposal - abandoned
✓ 040 - Completed - water disposal	✓ 140 - Oil - converted to steamflow - abandoned
✓ 034 - Completed - waterflow	• 155 - Oil - converted to observation
✓ 042 - Idle - water disposal	✓ 240 - Oil - converted to steamflow
✓ 044 - Oil well - converted to water disposal	✓ 548 - Steamflow - idle

AREA MAP

The area map shows the project base map area (yellow box) located in Kern County, California, near the border with San Luis Obispo County. Key features include the Kern River, Bakersfield, and major highways (99, 198, 199, 197, 196, 195, 194, 193, 192, 191, 190, 189, 188, 187, 186, 185, 184, 183, 182, 181, 180, 179, 178, 177, 176, 175, 174, 173, 172, 171, 170, 169, 168, 167, 166, 165, 164, 163, 162, 161, 160, 159, 158, 157, 156, 155, 154, 153, 152, 151, 150, 149, 148, 147, 146, 145, 144, 143, 142, 141, 140, 139, 138, 137, 136, 135, 134, 133, 132, 131, 130, 129, 128, 127, 126, 125, 124, 123, 122, 121, 120, 119, 118, 117, 116, 115, 114, 113, 112, 111, 110, 109, 108, 107, 106, 105, 104, 103, 102, 101, 100, 99, 98, 97, 96, 95, 94, 93, 92, 91, 90, 89, 88, 87, 86, 85, 84, 83, 82, 81, 80, 79, 78, 77, 76, 75, 74, 73, 72, 71, 70, 69, 68, 67, 66, 65, 64, 63, 62, 61, 60, 59, 58, 57, 56, 55, 54, 53, 52, 51, 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0).

UIC Permit CA10710001

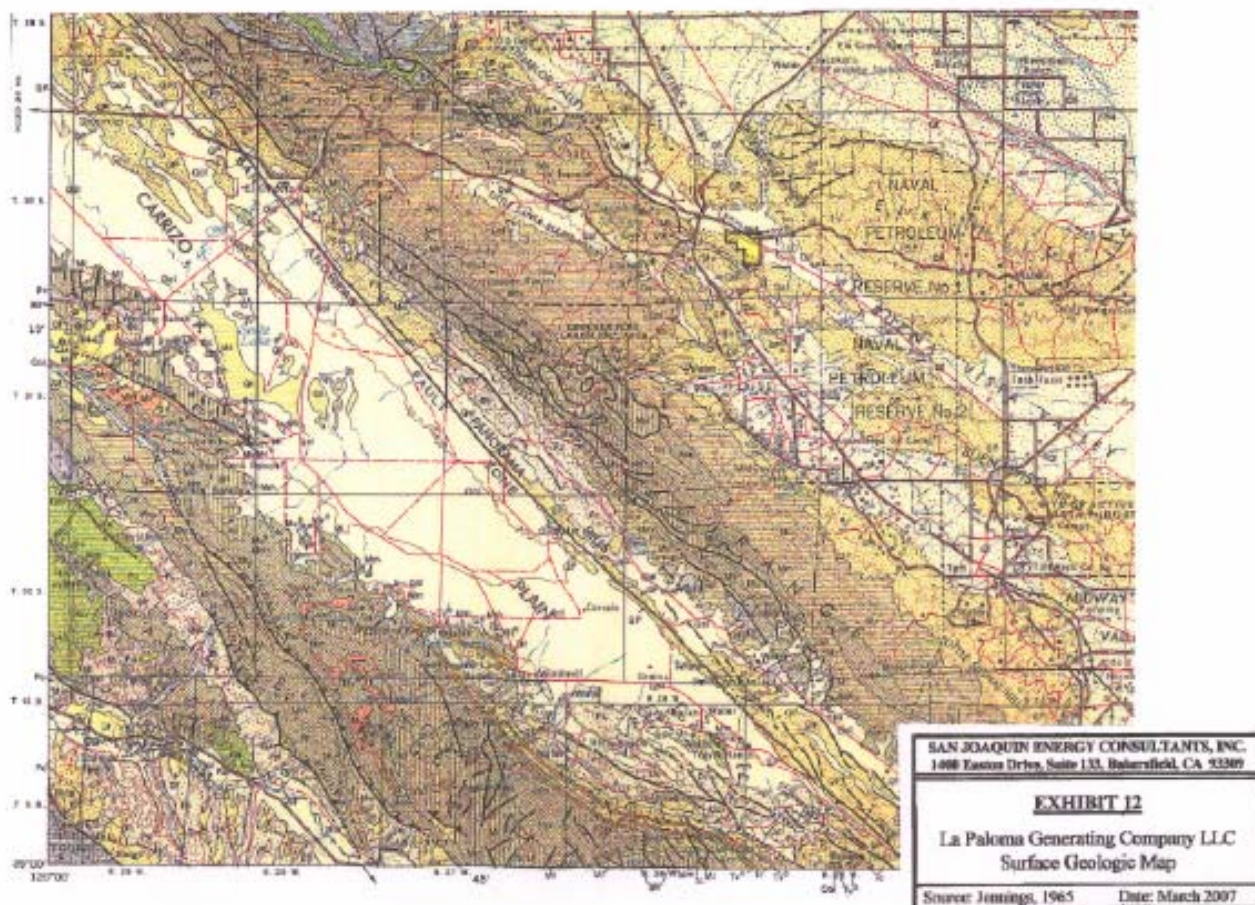


Figure 3. Surface geologic Map.

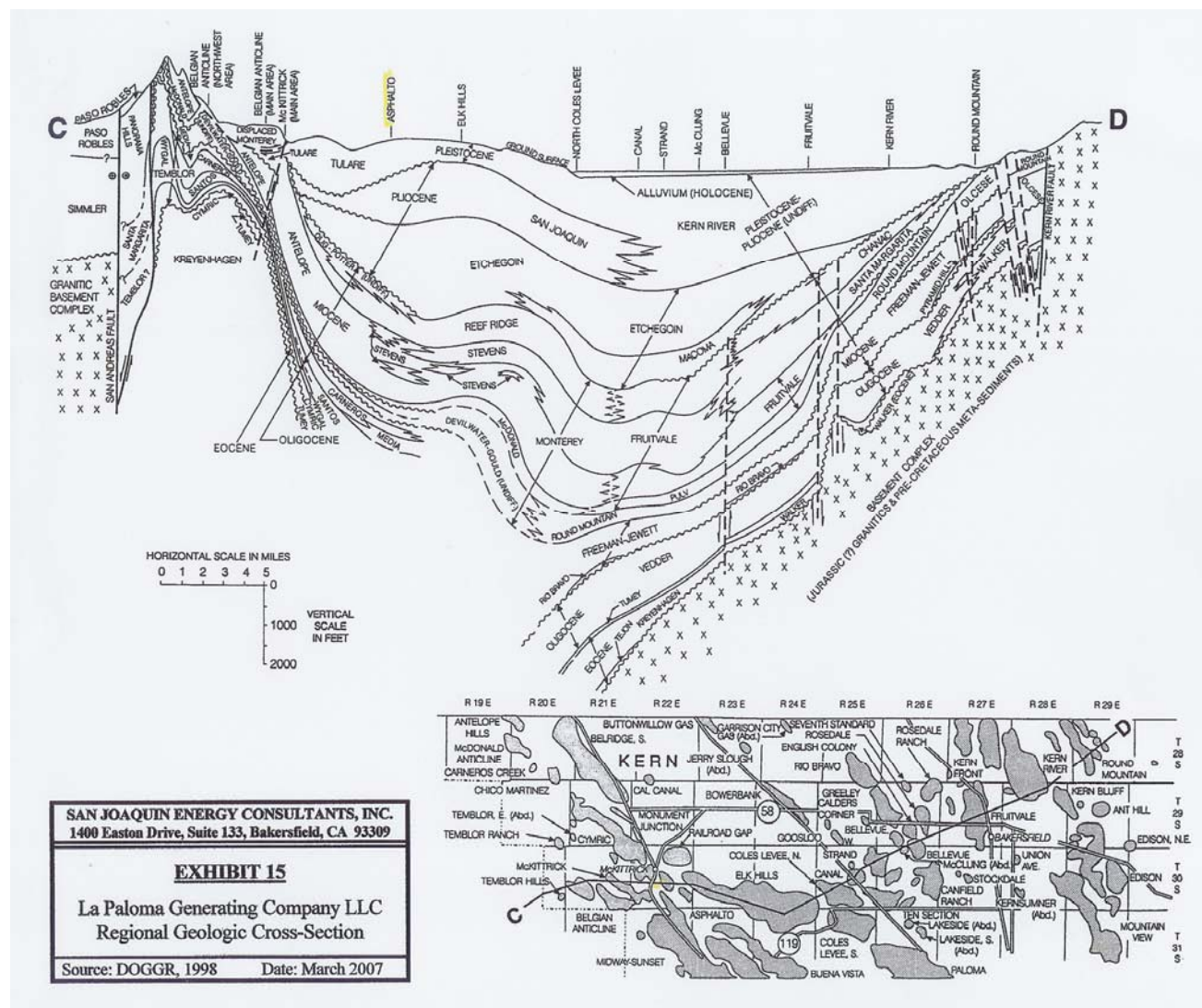


Figure 4. Regional Geologic Cross-Section

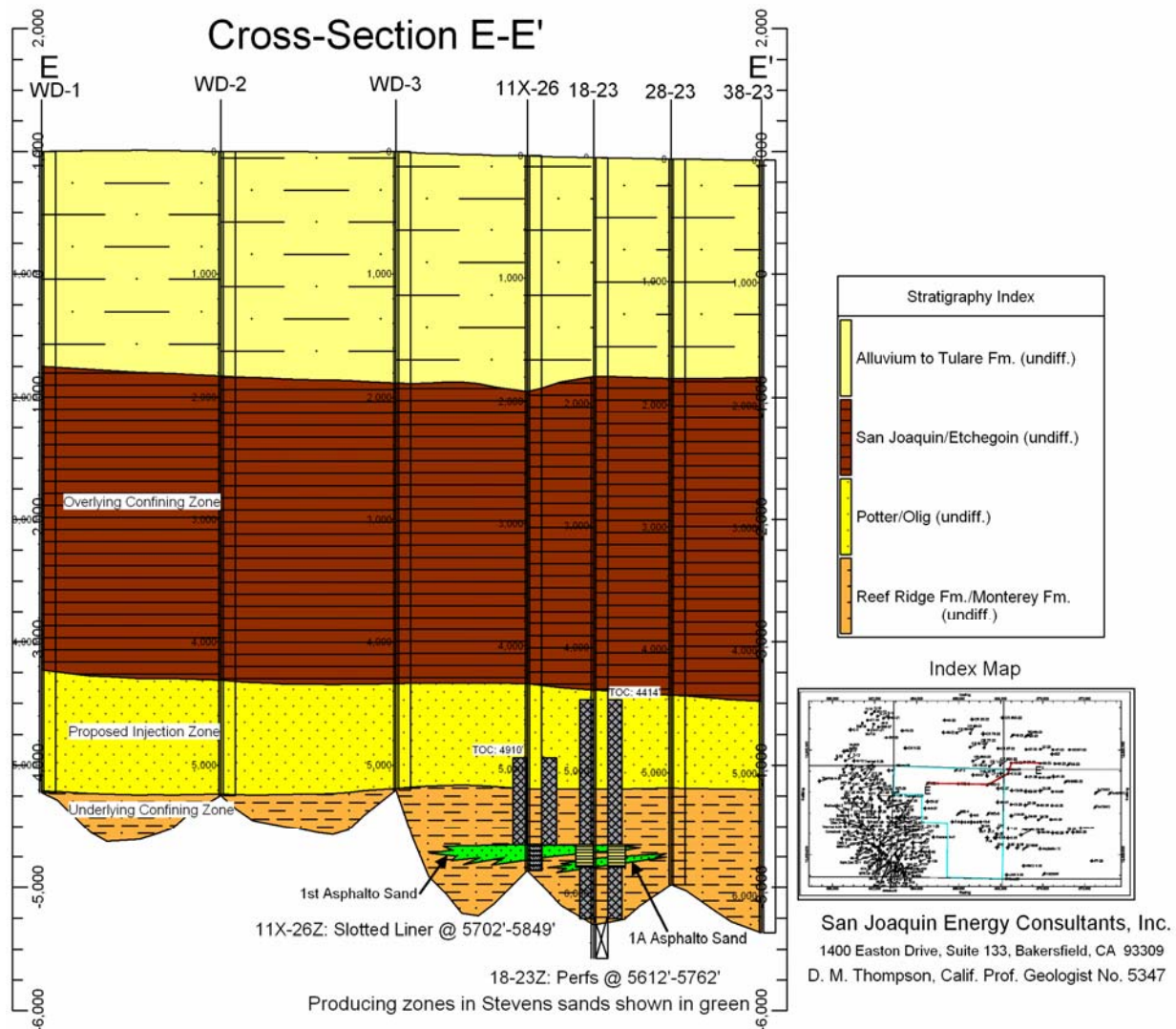


Figure 6. Representative strike and dip cross-section within the project area, which includes the boundary between the Olig sand injection zone and the underlying Reef Ridge Formation/Antelope shale member of the Monterey Formation (undiff.) in the vicinity of producing wells 11X-26Z and 18-23Z.

Table 1. Offset wells potentially impacted by injection based on 20-year waste/pressure front calculations. None of these wells were deemed to pose a significant risk.

Well	API #	Depth to Olig Top	Distance to Closest Injector	Waste Front Impact after 20 Years Inj @ 3,543 BDP/Well	Pressure Front Impact after 20 Years Inj @ 3,543 BDP/Well	Remarks
Probable Impact: Well within 100' of Waste Front						
71R-27Z	029-01480	4340'	WD #3 410' S	284' inside front	+31 psi	P&A 1-00; cemented above Olig top. No significant risk.
82-27Z	029-01482	4307'	WD #3 500' W	194' inside front	+31 psi	P&A 6-00; cemented above Olig top. No significant risk.
83-27Z	029-01483	4326'	WD #5 705' SW	11' outside front	+31 psi	P&A 6-00; cemented above Olig top. No significant risk.
Possible Impact: Well within +25 psi Pressure Front						
1-22Z	029-37546	4334'	WD #3 850' S	156' outside front	+26 psi	SIUE; annulus cemented above Olig top. No significant risk.
68X-22Z	029-37551	4306'	WD #2 1275' SW	581' outside front	+26 psi	SIUE; annulus cemented 18' below Olig top. No significant risk.
78-22Z	029-37554	5220'	WD #2 1270' S	576' outside front	+26 psi	SIUE; annulus cemented above Olig top. No significant risk.
88X-22Z	029-37557	4326'	WD #3 1080' SW	386' outside front	+25 psi	SIUE; annulus cemented above Olig top. No significant risk.
18-23Z	029-37569	4342'	WD #3 1500' SW	806' outside front	+24 psi	Active producer; annulus cemented above Olig top. No significant risk.
11X-26Z	029-37446	4306'	WD #3 1070' SW	376' outside front	+26 psi	Active producer; annulus cemented 600' below Olig top. No significant risk.
12-26Z	029-37447	4260'	WD #3 1160' W	466' outside front	+27 psi	P&A 9-97; annulus cement 820' below Olig top. No significant risk.
13-26Z	029-37536	4266'	WD #5 1170' SW	476' outside front	+27 psi	P&A 10-98; annulus cement 132' below Olig top. No significant risk.
14X-26Z	029-37536	4250'	WD #5 1100' W	406' outside front	+27 psi	P&A 8-05; annulus cement 250' below Olig top. No significant risk.
22-26Z	029-37449	4271'	WD #3 1815' W	1121' outside front	+25 psi	P&A 10-98; annulus cement 687' below Olig top. No significant risk.
23-26Z	029-37537	4230'	WD #6 1800' W	1106' outside front	+26 psi	P&A 4-68; mudded hole, no cement across Olig top. No significant risk.
33-27Z	029-05339	4273'	WD #1 855' N	161' outside front	+28 psi	P&A 2-66; cemented across Olig & potential BFW above. No significant risk.
61-27Z	029-01479	4419'	WD #2 820' SW	126' outside front	+30 psi	P&A 7-63; cemented above Olig top. No significant risk.
61-27Z	029-01481	4306'	WD #3 800' SW	106' outside front	+27 psi	P&A 1-00; cemented above Olig top. No significant risk.